12

Modular Power Supply 14a	Modular Power Supply 14b	Modular Power Supply 14c

Power Unit

18

10

Control Circuit 16

Alert Circuit 20

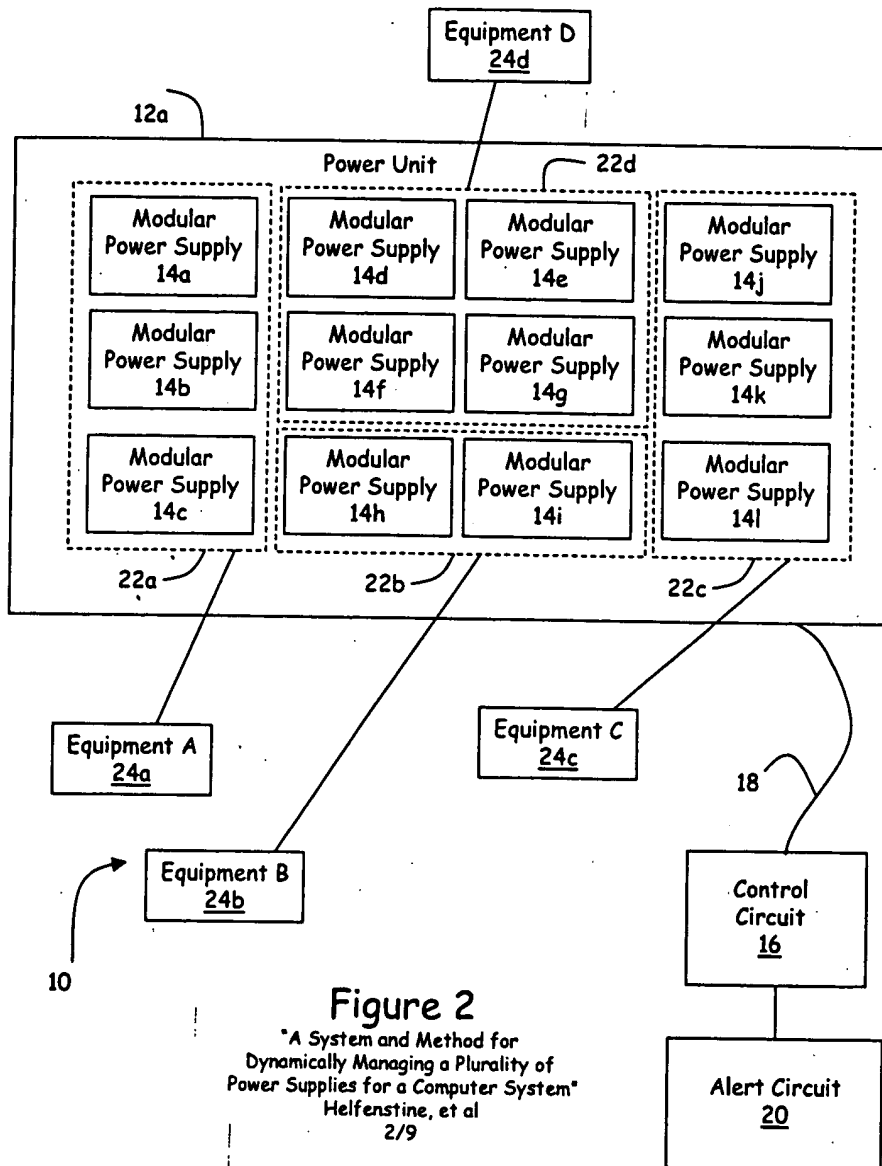# Figure 1

"A System and Method for
Dynamically Managing a Plurality of
Power Supplies for a Computer System"
Helfenstine, et al
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Equipment D
24d

12a

Power Unit   22d

Modular Power Supply 14a	Modular Power Supply 14d	Modular Power Supply 14e	Modular Power Supply 14j
Modular Power Supply 14b	Modular Power Supply 14f	Modular Power Supply 14g	Modular Power Supply 14k
Modular Power Supply 14c	Modular Power Supply 14h	Modular Power Supply 14i	Modular Power Supply 14l

22a   22b   22c

Equipment A
24a

Equipment C
24c

Equipment B
24b

18

Control
Circuit
16

10

Alert Circuit
20

Figure 2

'A System and Method for
Dynamically Managing a Plurality of
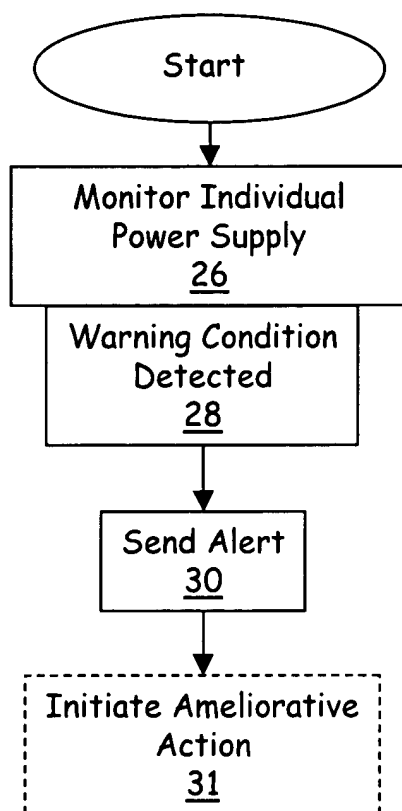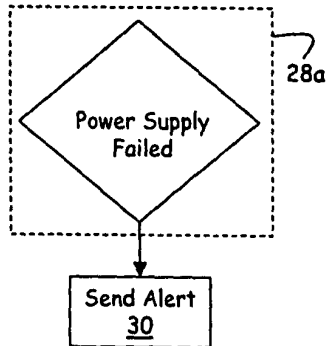Power Supplies for a Computer System'
Helfenstine, et al
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```
                    ┌──────────────┐
                    │    Start     │
                    └──────┬───────┘
                           │
                           ▼
              ┌────────────────────────┐
              │   Monitor Individual   │
              │     Power Supply       │
              │          26            │
              ├────────────────────────┤
              │   Warning Condition    │
              │       Detected         │
              │          28            │
              └────────────┬───────────┘
                           │
                           ▼
                 ┌──────────────────┐
                 │   Send Alert     │
                 │        30        │
                 └────────┬─────────┘
                          │
                          ▼
          ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
            Initiate Ameliorative
          │         Action            │
                      31
          └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
```

Figure 3

"A System and Method for
Dynamically Managing a Plurality of
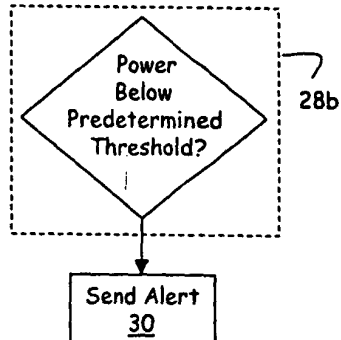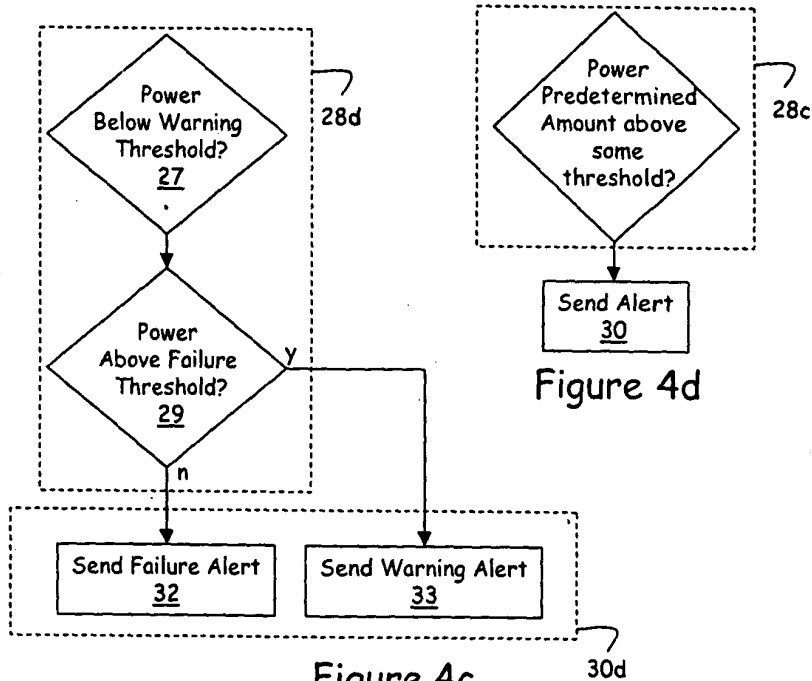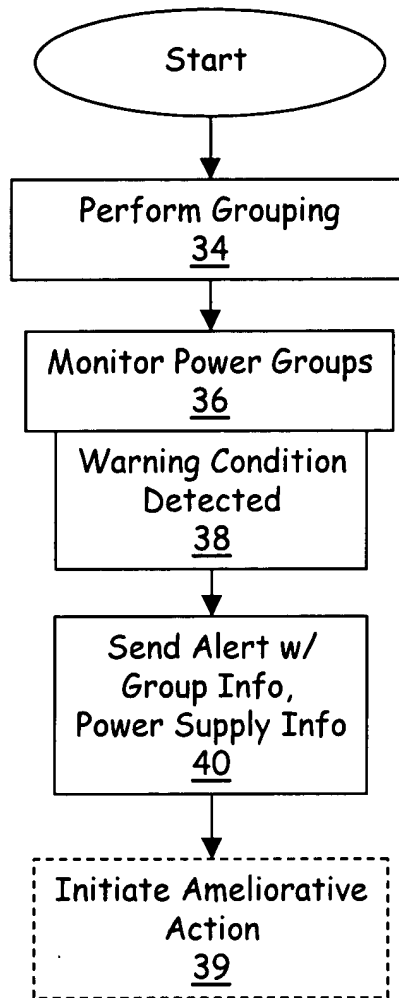Power Supplies for a Computer System"
Helfenstine, et al
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```
┌─────────────────────────┐
│          ◇              │  28a
│    Power Supply         │
│      Failed             │
│          ◇              │
└──────────┼──────────────┘
           ▼
    ┌──────────────┐
    │  Send Alert  │
    │      30      │
    └──────────────┘
```

Figure 4a

```
┌─────────────────────────┐
│          ◇              │  28b
│       Power             │
│       Below             │
│   Predetermined         │
│    Threshold?           │
│          ◇              │
└──────────┼──────────────┘
           ▼
    ┌──────────────┐
    │  Send Alert  │
    │      30      │
    └──────────────┘
```

Figure 4b

```
┌─────────────────────────┐
│          ◇              │
│       Power             │
│   Below Warning         │  28d
│    Threshold?           │
│        27               │
│          ◇              │
│          ▼              │
│          ◇              │
│       Power             │       y
│   Above Failure ────────┼──────┐
│    Threshold?           │      │
│        29               │      │
│          ◇              │      │
│        n │              │      │
└──────────┼──────────────┘      │
┌──────────▼──────────────────┐  │
│ ┌──────────────┐ ┌──────────▼─┐│
│ │Send Failure  │ │Send Warning││
│ │   Alert      │ │   Alert    ││
│ │     32       │ │     33     ││
│ └──────────────┘ └────────────┘│
└────────────────────────────────┘
```

Figure 4c   30d

```
┌─────────────────────────┐
│          ◇              │
│       Power             │
│   Predetermined         │  28c
│   Amount above          │
│      some               │
│    threshold?           │
│          ◇              │
└──────────┼──────────────┘
           ▼
    ┌──────────────┐
    │  Send Alert  │
    │      30      │
    └──────────────┘
```
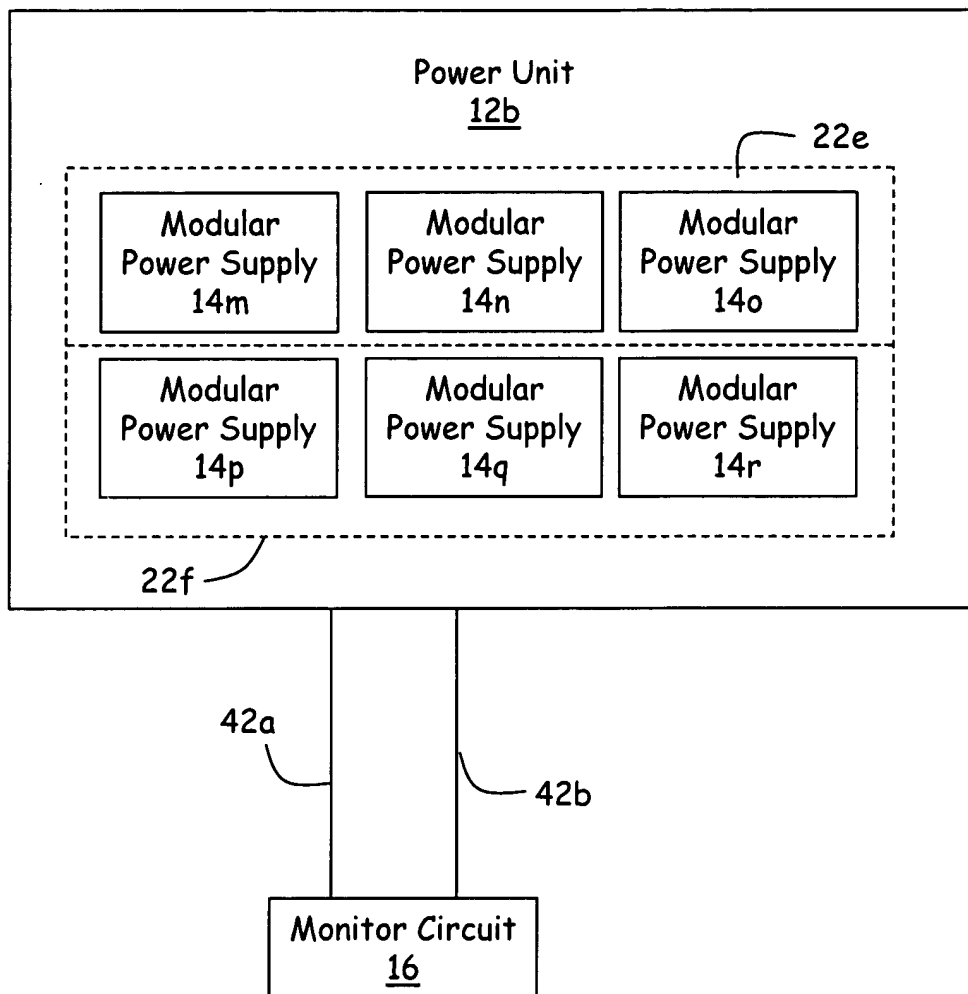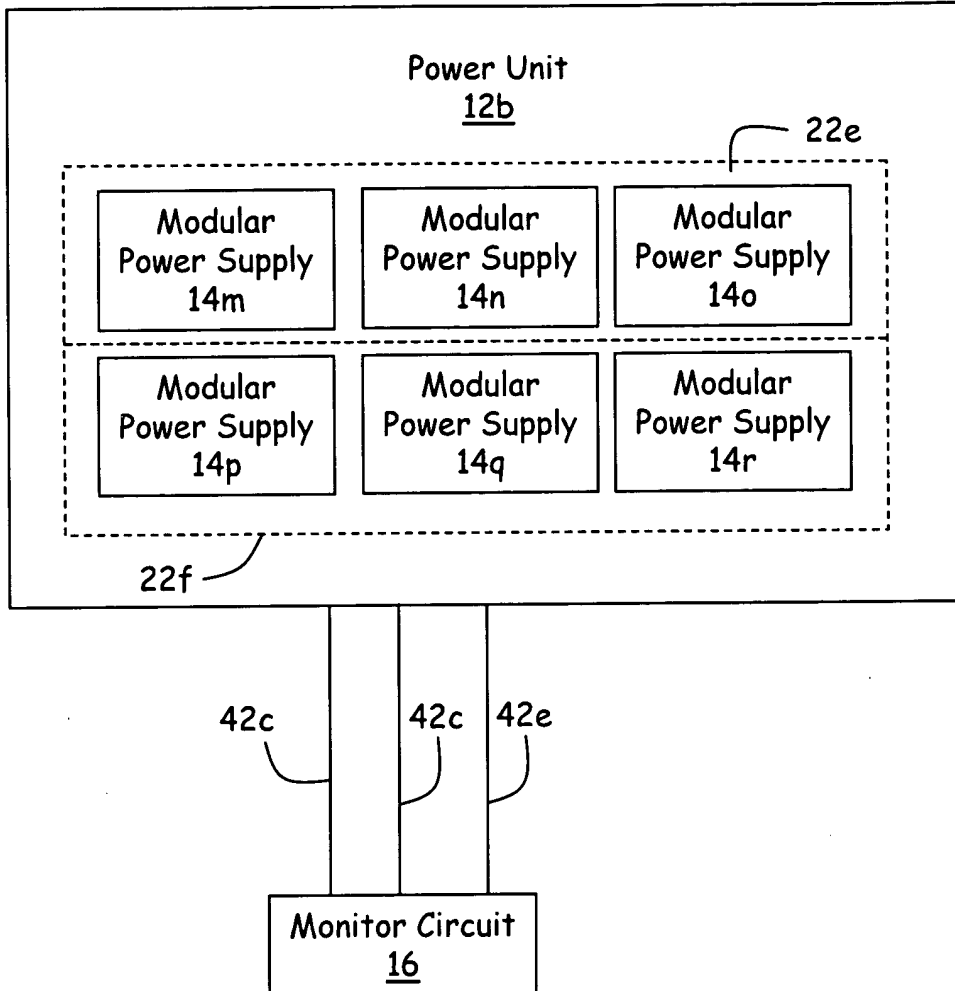
Figure 4d

"A System and Method for
Dynamically Managing a Plurality of
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Start

Perform Grouping
34

Monitor Power Groups
36

Warning Condition
Detected
38

Send Alert w/
Group Info,
Power Supply Info
40

Initiate Ameliorative
Action
39

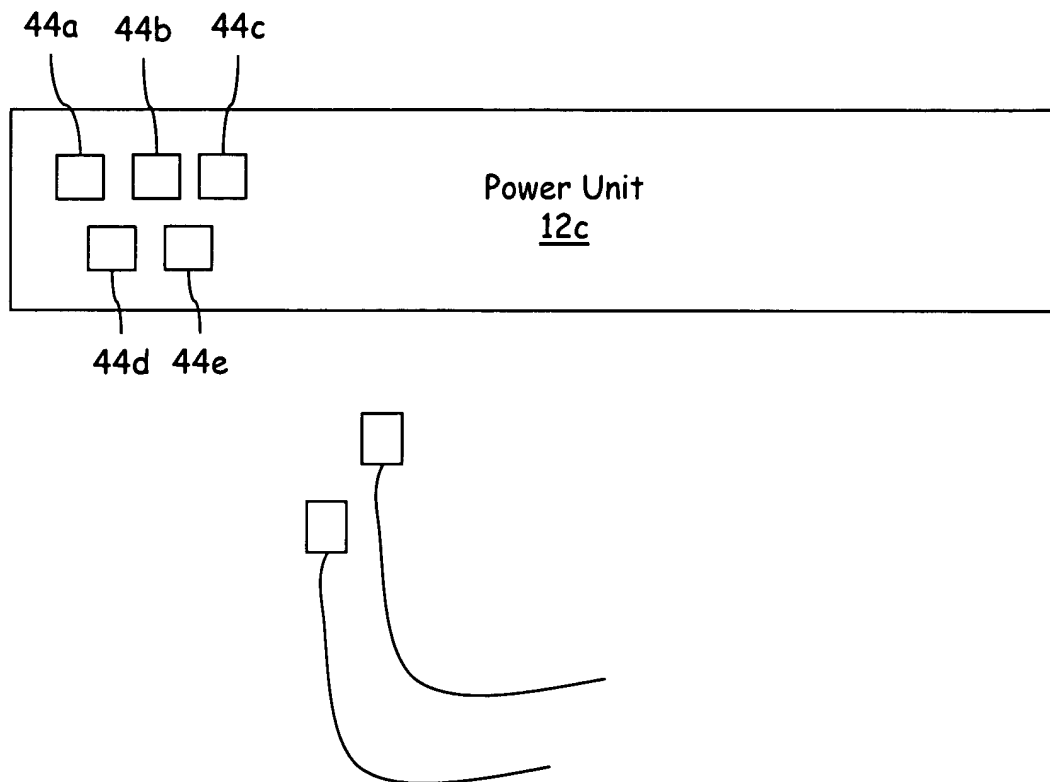# Figure 5

"A System and Method for
Dynamically Managing a Plurality of
Power Supplies for a Computer System"
Helfenstine, et al
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Power Unit
12b

22e

Modular
Power Supply
14m

Modular
Power Supply
14n

Modular
Power Supply
14o

Modular
Power Supply
14p

Modular
Power Supply
14q

Modular
Power Supply
14r

22f

42a

42b

Monitor Circuit
16

Figure 6

"A System and Method for
Dynamically Managing a Plurality of
Power Supplies for a Computer System"
Helfenstine, et al
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Power Unit
12b

— 22e

Modular
Power Supply
14m

Modular
Power Supply
14n

Modular
Power Supply
14o

Modular
Power Supply
14p

Modular
Power Supply
14q

Modular
Power Supply
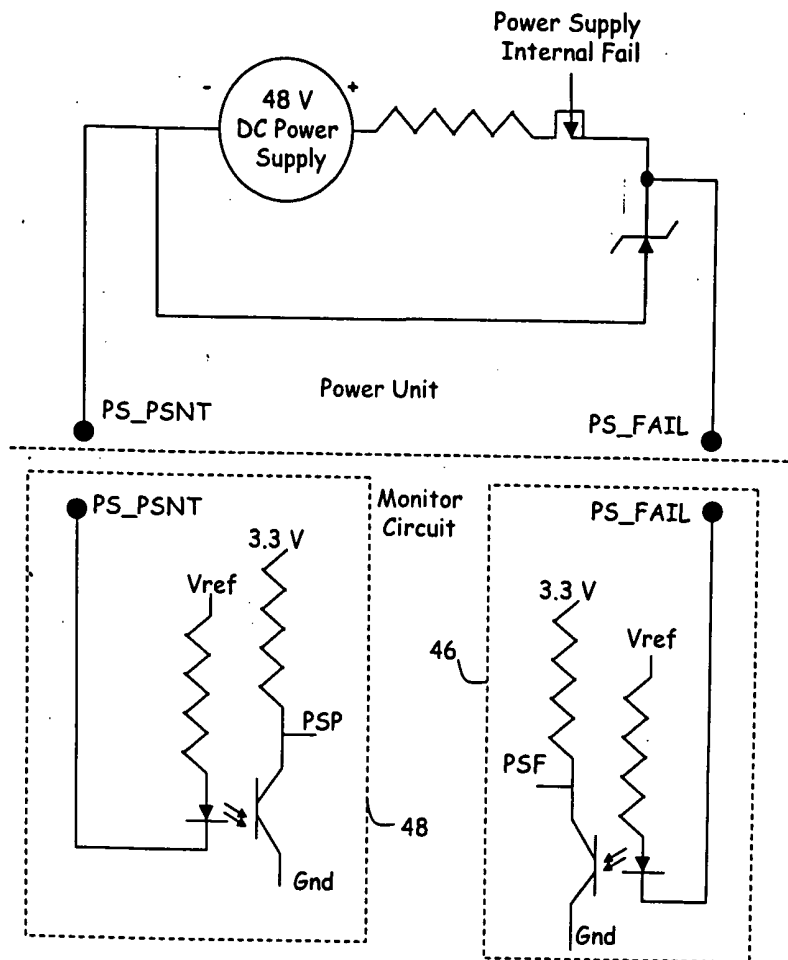**14r**

22f

42c   42c   42e

Monitor Circuit
16

Figure 7

"A System and Method for
Dynamically Managing a Plurality of
Power Supplies for a Computer System"
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44a   44b   44c

Power Unit
12c

44d   44e

Figure 8

"A System and Method for
Dynamically Managing a Plurality of
Power Supplies for a Computer System"
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Power Supply
Internal Fail

48 V
DC Power
Supply

Power Unit

PS_PSNT

PS_FAIL

PS_PSNT

3.3 V

Vref

PSP

Gnd

Monitor
Circuit

46

48

PS_FAIL

3.3 V

Vref

PSF

Gnd

Figure 9

*A System and Method for
Dynamically Managing a Plurality of
Power Supplies for a Computer System*
Helfenstine, et al